

## UNTYING OF THE TIED TONGUE: A CASE REPORT

PRANAV KUMAR THAKUR<sup>1</sup>, ABHAYA CHANDRA DAS<sup>1,2</sup>,  
SHWETA SHARMA<sup>3</sup> & SWARGA JYOTI DAS<sup>1</sup>

<sup>1</sup>Department of Periodontics, Regional Dental College and Hospital, Guwahati, Assam, India

<sup>2</sup>Department of Periodontics, Institute of Dental Sciences, SOA University,  
Kalinganagar, Bhubaneswar-, Odisha, India

<sup>3</sup>Department of Periodontics & Community Dentistry, Dr Ziauddin Ahmad Dental College,  
Aligarh Muslim University, Aligarh-, Uttar Pradesh, India

<sup>1</sup>Professor & Head, Department of Periodontics and Implantology,  
Regional Dental College, Guwahati, Assam, India

### ABSTRACT

*Ankyloglossia or 'tongue-tie' is an uncommon congenital anomaly which is characterized by an abnormally short, thick and fibrosed lingual frenulum causing restriction in tongue movement and interferes speech articulation. Though it is found to be associated with some rare syndromes such as X-linked cleft palate syndrome, Kindler syndrome and van der Woude syndrome, most often it is seen as a separate entity in an otherwise normal individual. Here, a 20 year old female with tongue-tie complaining of difficulty in speech and limited tongue movement is reported. It was managed by frenectomy procedure under local anesthesia. In order to functionally rehabilitate the tongue, the patient then underwent tongue training exercises and speech therapy.*

**KEYWORDS:** Ankyloglossia, Tongue-Tie, Anomaly, Speech and Frenectomy

**Received:** Jul 20, 2017; **Accepted:** Aug 08, 2017; **Published:** Aug 28, 2017; **Paper Id.:** IJDRDOCT20171

### INTRODUCTION

“Tongue-tie” is the synonym of “ankyloglossia” which originates from the Greek words “agkilos” (curved) and “Glossa” (tongue). It means the tongue is closely tied to the floor of the oral cavity at its free end. It is defined as a condition in which the tip of the tongue cannot be protruded beyond the lower incisor teeth because of a short frenulum linguae, often containing scar tissue (Wallace, 1963). The prevalence of ankyloglossia reported in the literature varies from 0.1% to 10.7%, higher in neonates than in children, adolescents, or adults (Chaubal and Dixit, 2011).

Tongue-tie limits the multi-functional ability of the tongue, regardless whether complete or partial. The consequences of tongue-tie include blanching of tissues, gingival recession and midline diastema in lower central incisors that occurs due to exertion of excessive forces at the time of its retrusion. Besides, an abnormally low position of the tongue may cause malocclusion like open bite, mandibular prognathism with hypodeveloped maxilla and tooth mobility due to an exaggerated anterior thrust (Messner and Lalakea, 2000). These complications result in mechanical problems, such as feeding, speech, dysarthria, dyspnea and difficulty in maintaining the oral hygiene (Suter and Bornstein, 2009). In addition to these functional problems, the adolescents face social embarrassment due to tongue-tie, which demands surgical intervention and correction of the condition

(Lalakea and Messner, 2003).

## CASE REPORT

A 20 year old female reported to the Department of Periodontics, Regional Dental College & Hospital, Guwahati, Assam, India, complaining of impaired tongue mobility and slurring or lack of clarity in speech. As such no contributory medical history was noticed. No abnormal finding was observed in ENT component. No noticeable change in the oral cavity was observed, except midline diastema between 31 and 41 and short lingual frenum. The protrusion of the tongue, i.e., the portion of the tongue from its tip to the incisal edges of 31 and 41, was measured with a metal scale and found to be 11 mm. The distance from tip of tongue to the base of its attachment was recorded as 10 mm (Figure 1). Based on these findings, it was categorized as Class II ankyloglossia (moderate) according to the classification of Kotlow (Kotlow, 1999), which is as follows:



**Figure 1: Preoperative Intraoral Photograph of Short and Thick Lingual Frenum**

**Note:** The Midline Diastema between 31 and 41, and protrusion of the tongue is approximately of 11 mm

### Classification of Ankyloglossia: Based on “Free Tongue” Length:

**Clinically acceptable, normal range of free tongue:** >16 mm

- **Class I:** Mild ankyloglossia (12-16 mm)
- **Class II:** Moderate ankyloglossia (8-11 mm)
- **Class III:** Severe ankyloglossia (3-7 mm)
- **Class IV:** Complete ankyloglossia (<3 mm)

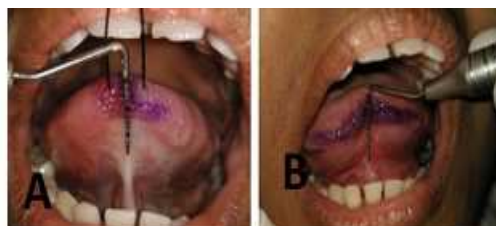
Considering the clinical situation, frenectomy of the lingual frenum was planned. The patient was informed about the treatment procedure and written consent was obtained.

After attaining asepsis of the operating area, the bilateral lingual nerve blocks were performed using 2% lidocaine containing 1:80,000 epinephrine. The short and fibrous lingual frenum was made taut by upward traction on the tongue by passing a 3-0 non absorbable surgical suture (Ethicon Inc., USA) through the midline of the tongue around ¼ inch from the tip. Then the lingual frenum was held with a small curved hemostat with the convex curve facing the ventral surface of the tongue. The first incision was made with a #15c blade along the curvature of the hemostat, incising its upper aspect. The second incision was made in its lower aspect, fairly close to the floor of the mouth. With these two incisions, a fold of mucosa was excised. The wound margins were then undermined with the tips of a blunt-ended dissecting scissor. Tension-free closure was done by 4-0 absorbable surgical suture, first in the middle of the wound and then additional sutures were placed along the tongue base and on the floor of the mouth.

The sutures were removed on day 10. The healing was found to be uneventful with no scar. Tongue training

exercises were advised immediately after surgery to prevent adhesion and, thereby, to increase the mobility of the tongue for 3 or 4 weeks post-operatively. The patient was also referred to a speech therapist for correction of the defect in speech.

After 3 months of surgery, the protrusion of the tongue was found to be around 15 mm, which is increased by 37%. Similarly, the severity of ankyloglossia was reduced and shifted to “mild” (16 mm) from “moderate” (10 mm) category postoperatively, as shown in Figure 2, measuring the distance from the tip of the tongue to the base using UNC probe 15 after marking with surgical marker pen. The patient was recalled at regular intervals for further assessment and follow-up (Figure 2 and 3).



**Figure 2: Pre and Postoperative View of Free Tongue Length**

**Note:** 10 mm Of Free Tongue Length preoperatively (A), which is increased to 16 mm postoperatively (B), marked by a surgical skin marker



**Figure 3: Pre and Postoperative View of the Frenum**

**Note:** The Attachment of the Frenum at much lower level postoperatively (B) than preoperatively (A)

## DISCUSSIONS

Ankyloglossia remain asymptomatic in many cases. However, in some cases, due to the limited mobility of the tongue it results in speech problems, particularly consonants and sounds like “s, z, t, d, l, j, sh, ch, th, dig” (Messner and Lalakea, 2002). In these cases, it demands for relocation or excision of the frenum, regarded as frenotomy and frenectomy, respectively (Newman *et al.*, 2011). Again, tongue-tie is seen to get resolved spontaneously in some individuals or the affected individuals may learn to compensate adequately for their decreased lingual mobility by late childhood (Reddy *et al.*, 2014)

The tongue muscles are readily trainable as seen in other muscles of the body. To prevent the adhesion and, thereby, to increase the mobility of the tongue, the exercises were started immediately after surgery. The exercises advised were stretches of the tongue towards the nose and then downwards the chin, touching the big front teeth with the tongue while mouth remains open and poking of the tongue into the left and right cheek to make a lump with close mouth. The exercises were carried out repeatedly for 3 to 5 minutes, once or twice daily for 3 or 4 weeks post-operatively (Lalakea and Messner, 2003). These exercises increase the kinesthetic awareness of the tongue muscles and thereby encourage the full range of tongue movements.

## CONCLUSIONS

Functional limitation of the tongue and social embarrassment due to the condition like tongue-tie demands for correction. Combined surgical intervention and speech therapy appeared to be a competent procedure.

## REFERENCES

1. Chaubal, T.V., & Dixit, M.B. (2011). Ankyloglossia and its management. *J Indian SocPeriodontol*, 15, 270-272.
2. Kotlow, L.A. (1999). Ankyloglossia (tongue-tie): a diagnostic and treatment quandary. *Quintessence Int*, 30, 259-262.
3. Lalakea, M.L., & Messner, A.H. (2003). Ankyloglossia: the adolescent and adult perspective. *Otolaryngol Head Neck Surg*, 128, 746-752.
4. Messner, A.H., & Lalakea, M. L. (2000). Ankyloglossia: controversies in management. *Int J PediatrOtorhinolaryngol*, 54, 123-131.
5. Messner, A.H., & Lalakea, M.L. (2002). The effect of ankyloglossia on speech in children. *Otolaryngol Head Neck Surg*, 127, 539-545.
6. Newman, M. G., Takei H. H., & Klokkevold, P.R. (2011). *Carranza's Clinical Periododontology* (10th ed.). Philadelphia, PA: Saunders.
7. Reddy, N.R., Marudhappan, Y., Devi, R., & Narang, S. (2014). Clipping the (tongue) tie. *J Indian SocPeriodontol*, 18, 395-398.
8. Suter, V.G., & Bornstein, M.M. (2009). Ankyloglossia: facts and myths in diagnosis and treatment. *J Periodontal*, 80, 1204-1219.
9. Wallace, A. F. (1963). Tongue-tie. *Lancet*, 2, 377-378.